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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,206	03/31/2004	Angel Stoyanov	25384	9520

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WEYERHAEUSER COMPANY  
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EXAMINER
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CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

NOTIFICATION DATE	DELIVERY MODE
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05/08/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@weyerhaeuser.com

# Office Action Summary

Application No.

10/815,206

Applicant(s)

STOYANOV ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, filed 2/23/2007, have been fully considered but are not persuasive. However, the rejection has been amended to include the amended subject matter as detailed below. In addition, new grounds of rejection are made in view of a modified interpretation of the previously cited references:

2. Applicant argues on pp 4-8 that a polycarboxylic acid (disclosed by Hansen et al as a binder that can also crosslink) that reacts with cellulose can no longer act as a binder. Applicant further argues that Hansen et al do not disclose using a crosslinking agent in the presence of the claimed amount of polyol. Applicant also argues that Hansen et al discloses that polyols, polycarboxylic acids and polyamines can independently crosslink, but does not state that combinations of polyols, polycarboxylic acids and polyamines can crosslink. Applicant argues that the disclosed binders and combinations of binders represent a large group, that not all of the possible combinations will result in the claimed increase in wet bulk and Whiteness Index, and that Hansen et al gives no guidance as to which combinations will give the properties of the claimed invention. Applicant also argues that there is no motivation to the skilled artisan to use sorbitol or xylitol, because the submitted Declaration shows that there is no increase in bulk or Whiteness Index when using the species independently. Applicant further argues that the claimed combination of crosslinking agent and polyol gives unexpected results. Applicant argues that, while Hansen et al discloses situations wherein the binder can act as a crosslinking agent, the statement is in the context of the

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given example XXVI, where the crosslinking agent is dimethyloldihydroxyethylene urea. Applicant concludes that virtually endless experimentation would be required to arrive at the instant invention.

Instant Claim 1 is broadly directed to a structure comprising crosslinked cellulosic fibers reacted with a crosslinking agent in the presence of about 1-10% of the weight of the cellulosic fiber of a C<sub>4</sub>-C<sub>12</sub> polyol. No specific crosslinking agent or polyol is claimed.

Hansen et al discloses crosslinking agents and polyols in at least as much detail as recited in the claims rejected over the reference. Hansen et al teaches polycarboxylic acids as crosslinking agents for cellulosic fibers and recites citric acid as an example (col 2, lines 1-4; col 38, lines 35-37). Hansen et al discloses preferred particle binders, such as a polyol, and preferred groups of particle binders, such as a polycarboxylic acid and a polyol (col 19, lines 50-61 and particularly line 61). Suitable particle binders include  $\alpha$ -hydroxy polycarboxylic acids (citric or tartaric acid are recited as examples), polyols and polyhydric alcohols (monosaccharide and disaccharide are recited as examples that are C<sub>4</sub>-C<sub>12</sub> acyclic polyols per the definition given on p 4, lines 12-13 of the instant Specification) (col 15, lines 41-45; col 16, lines 57-67; col 20, lines 34-40). The binders are added in an amount from 3-80% by weight of the fibers, particles and binders, and preferably from 3-25% by weight (col 4, lines 41-49; col 5, lines 3-6). The particles are preferably added in an amount from 5-80% by weight. A preferred weight ratio of particles to binder is 2:1 to 4:1. Thus, the amount of binder present significantly overlaps the claimed amount. Hansen et al discloses that the

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particle binders of the present invention can be added before, after or simultaneously with curing (col 42, lines 31-34). Using any crosslinking agent, the disclosure reads at least on the structural features of Claim 1. In addition, Claims 38 and 44, which do not specify that the crosslinking agent is dimethyloldihydroxyethylene urea, recite that a binder and crosslinking agent are applied to the fibers, the treated fibers are cured (in the presence of the binder) and that sufficient functionality remains in the binder to bind a substantial portion of the particles to the fibers. The Declaration of Stoyanov has demonstrated that some acyclic polyols, such as sorbitol and xylitol, do not crosslink cellulosic fibers and Hansen ('256) teaches that the crosslinking material can be cured in the presence of binders that do not crosslink without taking steps to inhibit ester bond formation, thus the crosslinking can occur without all of the binder being consumed (col 42, lines 57-60). Although the purpose of the binder of Hansen et al is different than for the polyol of the instant application, the resulting composition and crosslinked structure significantly overlap the claimed composition and structure. The recited properties of the structure do not limit the structure but occur as a result of the structure.

The Declaration of Stoyanov is not relevant to Hansen et al's purpose. Applicant has demonstrated that some acyclic polyols do not crosslink cellulosic fibers. Whether or not the polyol actually crosslinks the fibers is also irrelevant to the instant claims, which recite only that the crosslinking occurs in the presence of the polyol. In any case, the Declaration and instant Specification only teach the results of crosslinking fibers with the claimed acids, sodium hypophosphite and the claimed polyols. No comparison is made with Hansen et al and no evidence is given for the generic claim that fibers

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crosslinked in the presence of a polyol will have improved properties over the fibers of Hansen et al.

One of ordinary skill in the art would find it obvious to choose citric acid as a well known crosslinking agent, to use a polyol or a combination of a polycarboxylic acid and a polyol as a preferred binder and to cure the crosslinking agent in the presence of the binder as recited in the claims of Hansen et al.

It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. >See, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (motivation question arises in the context of the general problem confronting the inventor rather than the specific problem solved by the invention); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323, 76 USPQ2d 1662, 1685 (Fed. Cir. 2005) ("One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings.")

3. With respect to Smith et al, Applicant admits on p 11 that the skilled artisan would expect citric acid and malic acid to perform similarly. Smith et al was used merely to teach that citric acid, malic acid and tartaric acid are well known crosslinking agents for cellulosic fibers, all are  $\alpha$ -hydroxy polycarboxylic acids, and one of ordinary skill in the art would have expected similar crosslinking performance from any of the three acids, thus one would have been obvious over the other as a functional equivalent.

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4. With respect to Hansen et al ('326), Applicant presents arguments against Hansen et al ('326) that are similar to those against Hansen et al ('256). Hansen et al ('326) was used primarily to teach the use of sorbitol as a particle binder for an equivalent application as disclosed by Hansen et al ('256). As such, sorbitol would have been an obvious functionally equivalent option for a polyol binder.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hansen et al (5589256).

Hansen ('256) et al discloses crosslinked cellulosic fibers comprising particle binders (Abs; col 6, lines 14-23 and 56-57; col 7, lines 1-3; col 38, lines 22-28). The fibers can be ground wood fibers, recycled or secondary wood fibers, and can be bleached, thus the crosslinked fibers can be bleached crosslinked fibers. Note that the

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instant claims do not recite that the fibers are bleached subsequent to crosslinking.

Polycarboxylic acid, such as citric acid, is a suitable crosslinking agent (col 38, lines 29-36). One or more particle binders can be used, including  $\alpha$ -hydroxy polycarboxylic acids (citric or tartaric acid are recited as examples), polyols and polyhydric alcohols (monosaccharide and disaccharide are recited as examples that are C<sub>4</sub>-C<sub>12</sub> acyclic polyols per the definition given on p 4, lines 8-9 of the instant Specification (col 15, lines 41-45; col 16, lines 57-67; col 20, lines 34-40). Groups of particle binders are preferably used together, such as a polycarboxylic acid and a polyol (col 19, lines 54-61 and particularly line 61). The particle binders can be added before, after or simultaneously with curing (col 42, lines 31-34). The binders are added in an amount from 3-80% by weight of the fibers, particles and binders, and preferably from 3-25% by weight (col 4, lines 41-49; col 5, lines 3-6). The particles are preferably added in an amount from 5-80% by weight. A preferred weight ratio of particles to binder is 2:1 to 4:1. Thus, the amount of binder present significantly overlaps the claimed amount. Thus, in some embodiments, the fibers are crosslinked in the presence of the particle binder that comprises a C<sub>4</sub>-C<sub>12</sub> acyclic polyol or an  $\alpha$ -hydroxy polycarboxylic acid and the polyol, where the polyol is present in the claimed amount.

Where the binders can also function as an interfiber crosslinking agent (citric acid and polyols are recited as examples), the fibers should contain at least 20% by weight of water, which inhibits ester bond formation and ensures that adequate binder will remain in the fibers to bind the particles to the fibers (col 42, lines 38-57). The Declaration of Stoyanov has demonstrated that some acyclic polyols, such as sorbitol



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and xylitol, do not crosslink cellulosic fibers. Whether or not the polyol actually crosslinks the fibers is also irrelevant to the instant claims, which recite only that the crosslinking occurs in the presence of the polyol. In any case, Hansen ('256) teaches that the crosslinking material can be cured in the presence of binders that do not crosslink without taking steps to inhibit ester bond formation so the crosslinking can occur without all of the binder being consumed (col 42, lines 57-60).

Composite absorbent products that can be made using the fibers diapers, sanitary napkins, incontinent pads and towels (col 42, line 66 to col 43, line 9).

Hansen ('256) discloses the structural and compositional limitations as claimed. The recited properties of the structure do not limit the structure but occur as a result of the structure. The bleached crosslinked fibers of Hansen et al have a substantially identical structure to the claimed fibers and inherently possess or, at least, it would have been obvious to one of ordinary skill in the art to obtain the claimed properties of Whiteness Index, brightness and bulk. Where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Claims 1-4 and 13-16 are similar to product-by-process claims. The product of Hansen et al ('256) appears to be the same as or similar to the claimed product, bleached crosslinked cellulosic fibers and products made therefrom, although produced

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by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of claims 1-4 and 13-16 as opposed to the product taught by the reference Hansen et al ('256), such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

6. Claims 1-4 and 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hansen et al (5789326).

Hansen et al ('326) discloses crosslinked cellulosic fibers comprising particle binders (Abs; col 10, lines 26-40; col 11, lines 4-5 and 17-19; col 42, lines 29-42). The fibers can be ground wood fibers, recycled or secondary wood fibers, and can be bleached, thus the crosslinked fibers can be bleached crosslinked fibers. Note that the instant claims do not recite that the fibers are bleached subsequent to crosslinking. Polycarboxylic acid, such as citric acid, is a suitable crosslinking agent (col 43, lines 1-8). Particle binders include  $\alpha$ -hydroxy polycarboxylic acids (citric is recited as an example) and polyols (sorbitol is claimed) (col 46, lines 7-15; Claims 3 and 4). The particle binders can be added before, after or simultaneously with curing (col 45, line 66 to col 46, line 3). The crosslinking agent, such as citric acid, or any other crosslinking agent known in the art, can be added independently of the binder (col 42, line 61 to col

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43, line 14 and particularly col 43, line 8). The binders are added in an amount from 1-80% by weight of the fibrous material, and from 1-25% by weight is especially suitable (col 4, lines 49-53), which significantly overlaps the claimed amount. Thus, in some embodiments, the fibers are crosslinked in the presence of the particle binder that comprises a C<sub>4</sub>-C<sub>12</sub> acyclic polyol, in particular sorbitol, in the claimed amount.

Where the binders can also function as an interfiber crosslinking agent (citric acid and polyols, are recited as examples), the fibers should contain at least 20% by weight of water, which inhibits ester bond formation and ensures that adequate binder will remain in the fibers to bind the particles to the fibers (col 46, lines 12-29). The Declaration of Stoyanov has demonstrated that some acyclic polyols, such as sorbitol and xylitol, do not crosslink cellulosic fibers. Whether or not the polyol actually crosslinks the fibers is also irrelevant to the instant claims, which recite only that the crosslinking occurs in the presence of the polyol. In any case, Hansen ('326) teaches that the crosslinking material can be cured in the presence of binders that do not crosslink without taking steps to inhibit ester bond formation so the crosslinking can occur without all of the binder being consumed (col 46, lines 26-29).

Composite absorbent products that can be made using the fibers diapers, sanitary napkins, incontinent pads and towels (col 46, lines 36-45).

Hansen ('326) discloses the structural and compositional limitations as claimed. The recited properties of the structure do not limit the structure but occur as a result of the structure. The bleached crosslinked fibers of Hansen have a substantially identical structure to the claimed fibers and inherently possess or, at least, it would have been

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obvious to one of ordinary skill in the art to obtain the claimed properties of Whiteness Index, brightness and bulk. Where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Claims 1-4, 6-8 and 13-16 are similar to product-by-process claims. The product of Hansen et al ('326) appears to be the same as or similar to the claimed product, bleached crosslinked cellulosic fibers and products made therefrom, although produced by a different process. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of claims 1-4, 6-8 and 13-16 as opposed to the product taught by the reference Hansen et al ('326), such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

7. Claims 1-4, 6-10 and 13-16 are rejected under 35 U.S.C. 103(a) as unpatentable over Hansen et al ('256) or Hansen et al ('326) in view of Cook et al (5562740).

The disclosures of Hansen ('256) and Hansen et al ('326) are used as above.

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Hansen ('256) et al and Hansen et al ('326) do not disclose bleaching the fibers after crosslinking.

As discussed in previous Office Actions, bleaching is a well known process in the art for whitening pulps, papers and other substrates and hydrogen peroxide is a preferred bleach.

Cook et al discloses a method for reducing odor and increasing brightness of cellulosic fibers crosslinked with citric acid, the method comprising contacting the crosslinked fibers with a solution of sodium hydroxide in combination with an oxidizing bleaching agent (Abs; col 3, lines 29-52). The crosslinked fibers have a brightness of 80 to 86 after bleaching in an aqueous solution of sodium hydroxide and hydrogen peroxide (col 3, lines 42-52). Cook et al teaches that improved brightness has a better aesthetic appeal to customers (col 3, lines 8-12). Cook et al does not disclose bleached fibers that have a WI at least one unit greater than unbleached fibers.

The art of Hansen ('256), Hansen et al ('326), Cook et al and the instant invention is analogous as pertaining to treating polycarboxylic acid crosslinked cellulosic fibers. Hansen ('256) discloses cellulosic fibers crosslinked with an  $\alpha$ -hydroxy polycarboxylic acid in the presence of a C<sub>4</sub>-C<sub>12</sub> polyol, which is present in the claimed amount. Hansen ('326) discloses cellulosic fibers crosslinked with an  $\alpha$ -hydroxy polycarboxylic acid in the presence of a C<sub>4</sub>-C<sub>12</sub> polyol, in particular sorbitol, which is present in the claimed amount. Cook et al discloses that bleaching citric acid crosslinked fibers increases their brightness to the claimed values and provides motivation to bleach the crosslinked fibers. It would have been obvious to one of

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ordinary skill in the art to bleach the polycarboxylic acid crosslinked cellulosic fibers of Hansen et al ('256) or Hansen ('326) in view of Cook et al to increase their brightness for customer appeal and reduce odors from crosslinking. The combination of Hansen et al ('256) or Hansen ('326) in view of Cook et al results in fibers having a structure substantially identical to the structure of the claimed fibers. Where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent (MPEP 2112- 2112.01). It would thus have been obvious to obtain the claimed properties of Whiteness Index of the unbleached fibers and the increase of Whiteness Index of the bleached fibers.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as unpatentable over Hansen et al ('256) or Hansen ('326) in view of in view of Cook et al and further in view of Smith et al (US 2002/0090511).

Hansen et al ('256), Hansen ('326) and Cook et al do not disclose malic acid as a crosslinking agent. Hansen et al ('256) does teach that polycarboxylic acids are known to be crosslinking agents for cellulosic fibers and recites citric acid as an example (col 2, lines 1-4; col 38, lines 35-37). Hansen ('326) recites polycarboxylic acid as suitable crosslinking agents and recites citric acid as an example (col 43, lines 1-8).

Smith et al discloses that citric, malic and tartaric acids are crosslinking agents for cellulosic fibers p 6, pars 71 and 74; pp 13-14, Tables 3 & 4).

The art of Hansen et al ('256), Hansen ('326), Cook et al, Smith et al and the instant invention is analogous as pertaining to the crosslinking of cellulosic fibers. The claimed polycarboxylic acids are all  $\alpha$ -hydroxy polycarboxylic acids and one of ordinary skill in the art would have expected them to function similarly. It would have been obvious to one of ordinary skill in the art to use any of the claimed acids as a crosslinking agent for the fibers of Hansen et al ('256) or Hansen ('326) in view of Cook et al and further in view of Smith et al as well known and functionally equivalent options and have a reasonable expectation of success.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as unpatentable over Hansen et al ('256) in view of Cook et al and further in view of Hansen et al (5789326).

The disclosure of Hansen et al ('256) is detailed above. Hansen et al ('256) and Cook et al do not disclose the specific acyclic polyols and heterosides of the instant Claims.

The disclosure of Hansen et al ('326) is used as above. Hansen et al ('326) discloses crosslinked cellulosic fibers comprising particle binders having a structure similar to that of Hansen ('286). Sorbitol is specifically claimed as a binder (Claims 3 and 4) thus, in some embodiments, the fibers are crosslinked with citric acid in the presence of the particle binder that comprises a C<sub>4</sub>-C<sub>12</sub> acyclic polyol, specifically

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sorbitol, in the claimed amount. The structure disclosed by Hansen et al ('326) is similar to that disclosed by Hansen et al ('256).

The art of Hansen et al ('256), Cook et al, Hansen et al ('326) and the instant invention is analogous as pertaining to crosslinking cellulosic fibers. It would have been obvious to one of ordinary skill in the art at the time of the invention to use sorbitol as a particle binder in the fibers of Hansen et al ('256) in view of Hansen et al ('326) as a functionally equivalent option and have a reasonable expectation of success. It would also have been obvious to one of ordinary skill in the art that the other claimed species of polyol (erythritol, xylitol, arabinitol, ribitol, Mannitol, perseitol, volemitol), having structures similar to sorbitol (five to seven hydroxyl groups on adjacent carbon atoms), would be expected to react similarly. It would thus have been obvious to one of ordinary skill in the art to use sorbitol as the polyol particle binder in the fibers of Hansen et al ('256) in view of Cook et al and further in view of Hansen et al ('326) as a functionally equivalent option and have a reasonable expectation of success.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).



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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-8 and 12-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-8, 10-12 and 16-17 of copending Application No. 10/748930 in view of Cook et al. The copending application recites crosslinked cellulosic fibers comprising cellulosic fibers reacted with an effective amount of crosslinking agent in the presence of an effective amount of C<sub>4</sub>-C<sub>12</sub> polyol. The claimed structure of the fibers of the copending application differs from that of the instant application in that the crosslinked fibers are not bleached. The claims of the copending application do not exclude bleaching and so are generic to the claims of the instant application. Specifically, one embodiment anticipated by the claims of the copending application are the bleached crosslinked fibers of the instant application. Cook et al teaches bleaching crosslinked fibers and the motivation to do so. As detailed in the above rejection, the properties are a result of the structure. It would have been obvious to one of ordinary skill in the art to modify the claims of the copending application to include bleaching the crosslinked fibers of to make the fibers brighter and whiter. The composition of the crosslinked fibers is the same in both claims, thus their properties would be the same for reasons given in the above rejections.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DRC

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700